

ABSTRACT

A one-port surface acoustic wave resonator which can simultaneously achieve both a decrease in the frequency fluctuation and an improvement in the Q-factor of the antiresonance frequency is provided.

The one-port surface acoustic wave resonator 1 includes a rotated Y-cut LiTaO_3 substrate 2, an interdigital electrode transducer 3 on the LiTaO_3 substrate 2, and reflectors 4 and 5 at both sides in the surface acoustic wave propagation direction of the interdigital electrode transducer 3. When the electrode finger width of the interdigital electrode transducer 3 is denoted by a and the gap between the electrode fingers is denoted by b , the metallization ratio, $a/(a + b)$, is in the range of 0.55 to 0.85 and the interdigital electrode transducer 3 is assigned with overlapping-length weight.